

REMARKS

Amendments to the Specification are presented to correct for errors noted in Tables 8 and 10 of the application as filed.

Certain non-limiting amendments have been made to the claims to address grammar, context and antecedent issues.

In the Office Action dated April 19, 2006, the Examiner considered claims 1-14, issued a restriction requirement and identified two Groups.

Applicants respectfully traverse the restriction and request recombination of all claims 1-14 into a single group for examination.

Claims 1-12 and claims 13-14 (Groups I and II, respectively) are related method and apparatus claims. The Examiner has asserted that these groups are related as product and process of use. In order to restrict between process and apparatus for its practice, MPEP 806.05(h) requires that the Examiner must show that either or both: (1) the process for using the product as claimed can be practiced by another and materially different product, or (2) the product as claimed can be used in a materially different process of using that product. The Examiner appears to concede that test (1) cannot be met, and instead relies on test (2). Applicants respectfully disagree that test (2) has been satisfied.

The Examiner asserts, in support of test (2), that the product may be used for identifying genes that respond to changing environmental conditions, instead of identifying co-expressed or co-regulated genes. The product of claim 13 defines a system for implementing the method of claim 1 (claim 13 has been amended into independent format and now includes some limitations taken from claim 1). The analyzed data relate to gene expressions that may vary with time or to

changing environmental conditions (see, paragraph 118 of the Specification). If a group of genes react similarly in the presence of changes in environmental conditions, these genes are co-regulated. Analogously, if a group of genes evolves with time in a same way in a specific environmental condition, these genes are co-expressed. In summary, genes that respond to changing environmental conditions are co-regulated. Thus, Applicant asserts that the system of the invention (claim 13) may be used only for the process defined in claim 1. Therefore, test (2) is not satisfied.

Pursuant to MPEP 806.05(h), Applicant respectfully submits that the Examiner must now support a viable alternative use, or otherwise withdraw the restriction requirement between Groups I and II.

Applicant provisionally elects, subject to the foregoing traverse, Group I (claims 1-12).

The Examiner further considered claims 1-12 and issued a restriction requirement which identified two Species (noting that claims 1-3, 6 and 7 were generic).

Applicants respectfully traverse the restriction and request recombination of all claims 1-12 into a single species for examination.

Claims 4 and claims 5 and 8-12 (Species A and B, respectively), are related processes. In order to restrict between related processes, MPEP 806.05(j) requires that the Examiner must show that the inventions as claimed do not overlap in scope, the inventions as claimed are not obvious variants, and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function or effect. The requirement concerning the inventions not overlapping in scope refers to the inventions being mutually exclusive. In the present case, claim 5 recites a more detailed list of parameters which are generally described and

claimed in claim 4 (Applicants have amended claim 5 to depend from claim 4 so as to emphasize this relationship). Thus, claims 4 and 5 are NOT mutually exclusive claims. These two claims have some overlap in scope. Thus, Applicant asserts that there are not two patentably distinct species.

Applicant provisionally elects, subject to the foregoing traverse, the invention of claim 5.

The Examiner further considered claims 5 and 8-12 and identified a subspecies drawn to the utilization of different parameters. Applicant respectfully traverses.

First, Applicant reiterates that claim 5 now depends from claim 4 and that there is no separate species from which a subspecies distinction can be made.

Second, Applicant submits that the Examiner cannot make out the requirement under MPEP 806.05(j) for supporting a restriction because the inventions as claimed, in the context of claims 4 and 5, clearly overlap in scope.

Third, even within claims 8-12, which are directed to individual calculations, the inventions overlap in scope. The reason for this is because claims 8-12 all operate on the claims 4 and 5 recited “numerical parameters tied to gene expression levels.” Additionally, all of claims 8-12 refer to the generation of overall/global coefficients. These claims are all part of the same invention which processes numerical parameters tied to gene expression levels so as to identify groups of co-regulated and co-expressed genes (claim 1).

Thus, Applicant asserts that there is not a permitted subspecies species distinction. Applicant provisionally elects, subject to the foregoing traverse, the subspecies of the “absolute values of linear correlation components from claim 5 and use of that parameter in the calculation of claim 8.

CUSTOMER NO. 23932

PATENT APPLICATION
Docket No. 64659-3USPX

Examination of the application is requested.

Respectfully submitted,

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GenBank	alpha 0	alpha 7	alpha 14	alpha 21	alpha 28	alpha 35	alpha 42	alpha 49	alpha 56	alpha 63	alpha 70	alpha 77	alpha 84	alpha 91	alpha 98	alpha 11	alpha 119
YPR120C C30	-0.92	-0.32	0.98	1.03	0.32	-0.03	-0.12	-0.34	-0.29	-0.27	0.76	0.67	0.37	-0.17	0.16	-0.14	-0.43
YUL115V C30	-0.32	0.49	0.61	1.43	0.58	0.3	-0.45	-0.42	-0.06	0.06	0.34	0.58	0.36	-0.1	-0.32	-0.14	-0.43
YCR065W C30	-1.22	-0.23	0.54	0.66	0.18	0.07	-0.69	-0.47	-0.43	-0.6	0.18	0.77	0.66	0.38	0.1	0.28	-0.4
YDR097C C26	-0.56	-0.69	0.7	1.2	1	0.4	-0.47	-0.67	-0.2	-0.54	1.16	1.24	0.81	0.34	0.11	0.19	-0.6
YKL045W C30	-1.03	-0.22	0.63	0.61	0.29	-0.09	-0.62	-0.86	-1.03	0.19	0.65	0.53	0.24	-0.49	-0.32	-0.45	-1.43
YNL262W C30	0.84	-0.51	0.49	0.58	0.87	0.24	-0.18	-0.64	-0.43	-0.49	0.03	0.32	0.43	0.08	0.04	-0.56	-0.71
YOR074C C26	-1.43	-0.6	0.28	0.79	0.88	0.28	0.01	-1.03	-0.97	-0.4	-0.67	0.45	0.44	-0.2	-0.56	-0.51	-1.09
YER070W C26	-1.22	-0.51	1.32	1.74	0.99	0.71	-0.45	-0.43	-0.79	-0.3	0.59	1.49	0.97	0.44	0.24	0.36	-0.47
YLR103C C30	-0.64	-0.2	0.9	0.74	0.48	0.07	-0.3	-0.34	-0.47	-0.34	0.4	0.58	0.33	-0.15	-0.25	-0.15	-0.38
YNL312W C30	-0.69	-0.79	0.48	0.96	0.78	0.77	0.04	-0.47	-0.79	-0.56	0.05	0.23	0.53	-0.15	0.06	-0.62	-0.54
YUL074C C30	-0.74	-1.06	0.46	1.06	0.89	0.04	-0.15	-0.79	-0.76	-0.3	0.12	0.64	0.53	-0.17	-0.27	-0.45	-0.2
YUL187C C30	-0.94	-0.64	-0.04	0.51	0.38	-0.12	-0.2	-0.25	-0.45	-0.74	0.23	0.59	0.58	0.2	0.29	0.14	-0.49
YBR088C C26	-1.47	-1.18	0.89	1.29	0.8	-0.17	-0.76	0.48	-1.56	-0.94	0.3	0.97	0.76	-0.06	-0.29	-0.84	-1.22
YNL102W C30	-0.62	2.13	0.19	0.99	0.62	-0.17	-0.22	-0.2	-0.09	-0.64	0.28	0.73	0.71	0.08	0.2	-0.54	-0.47
YKL113C C30	-1.12	-0.45	0.29	0.79	0.3	-0.04	-0.56	-0.79	-0.86	-0.71	0.24	0.55	0.5	-0.27	-0.18	-0.25	-0.56
YDL184C C30	-0.62	-0.54	0.55	0.93	0.57	-0.06	-0.1	-0.84	-0.84	-0.4	0.11	0.73	0.6	-0.2	-0.25	-0.6	-0.6
YGL038C C30	-0.86	-0.22	0.5	0.57	-0.36	0.06	-0.69	-0.43	-0.42	0.2	0.32	0.63	0.31	0.14	-0.1	-0.12	-0.32
YPL057C C30	0.32	-0.29	0.96	0.84	0.8	1.08	0.29	-0.45	-0.74	0.19	0.95	0.76	0.58	0.2	0.34	-0.25	-0.51
YKL067W C30	-0.51	0.21	0.45	1.03	0.77	0.93	0.29	-0.12	-0.42	-0.3	-0.3	-0.03	0.37	-0.14	0.16	-0.23	-0.74
YER001W C26	-2.18	-0.58	0.87	1.71	0.64	0.66	-0.27	-0.43	-0.97	-0.84	0.18	1.46	1.13	1.1	0.31	0.07	-0.76
YPR135W C30	-0.56	-0.76	0.63	1.12	0.51	-0.12	-0.45	-0.79	-0.76	-0.84	0.12	0.57	0.43	-0.29	-0.17	-0.45	-0.71
YOL007C C26	-1.43	-1.25	0.83	0.73	0.77	-0.47	-0.32	-1.18	-1.47	-0.71	-0.32	0.58	0.78	0.39	-0.27	-0.4	-1.03
YPL256C C26	-1.69	-0.97	1.11	1.69	0.45	-0.07	-0.64	-1.6	-1.79	-1.36	0.07	1.29	0.82	0.28	-0.1	-0.6	-1.32
YIL140W C26	-1.43	-1.03	1.37	0.74	0.26	-0.17	-0.84	-1.18	-1.09	-1.03	-0.45	0.7	0.29	-0.36	-0.32	-0.51	-1.32
YDR309C C30	0.53	-0.62	0.33	0.38	0.11	-0.74	-1.09	-1.06	-0.47	-0.3	1.52	0.59	0.64	-0.3	0.53	-0.17	-0.42
YMR199W C26	-1.6	-0.97	1.25	0.83	0.9	0.44	0.03	-0.58	-1.15	-0.81	0.62	1.1	0.95	0.26	0.31	-0.06	-0.92
YGR152C C30	-0.49	-0.58	0.8	0.84	0.57	0.34	-0.01	-0.42	-0.47	-0.38	0.43	0.55	0.42	0.21	0.04	-0.3	-0.71
YBL035C C30	-0.45	-0.64	1.01	1.14	0.45	-0.4	-0.64	0.15	-1.09	0.44	0.04	0.28	0.32	0.03	-0.54	-0.12	-0.3
YPR175W C30	-0.54	-0.69	1.03	0.57	0.49	-0.12	-0.34	-0.62	-0.56	-0.45	0.1	0.52	0.3	-0.22	-0.15	-0.62	-0.69
YER111C C30	-1.25	-0.3	1.32	1.33	0.5	0.14	-0.89	-0.86	-0.79	0.03	0.85	0.74	0.33	-0.23	-0.15	-0.58	-0.51
P1	0.81	0	0.77	0.5	0.72	0.57	0.67										

P1 = POSITIVE LINEAR CORRELATION COEFFICIENT

P2 = NEGATIVE LINEAR CORRELATION COEFFICIENT

P3 = QUADRATIC CORRELATION COEFFICIENT

P4 = PERCENTAGE OF GENES HAVING A FINAL VALUE LARGER THAN THE INITIAL VALUE

P5 = PERCENTAGE OF GENES HAVING THE SAME TIME EVOLUTION

P6 = PERCENTAGE OF GENES HAVING A MAXIMUM EXCURSION IN THE SAME TIME INSTANT

Tab. 8

	1A11	1A21	1A31	1A41	1A51	1A61	1A71	1A81	1A91	1A101	1A111	1A121	1A131	1A141	1A151	1A161	1A171
YPR20C	0.30769	0.66667	0.02564	0.3641	0.17949	0.04615	0.11282	0.02564	0.01026	0.52821	0.04615	0.15365	0.27692	0.16923	0.15365	0.00513	0.14359
YUL15V	0.43085	0.06383	0.43617	0.45213	0.14894	0.39894	0.01596	0.19149	0.06383	0.14894	0.12766	0.11702	0.24468	0.11702	0.09574	0.14894	0.00532
YCR085V	0.49749	0.38693	0.0603	0.24121	0.05528	0.38191	0.11055	0.0201	0.08543	0.38191	0.29548	0.05528	0.1407	0.1407	0.09045	0.34171	0.01005
YDR097C	0.06736	0.72021	0.25907	0.10363	0.31088	0.45078	0.10363	0.24352	0.17617	0.88083	0.04145	0.2228	0.24352	0.11917	0.04145	0.40933	0.05899
YKL045V	0.38942	0.40865	0.00962	0.15365	0.18269	0.25481	0.11538	0.08173	0.58654	0.22115	0.05769	0.13942	0.35096	0.08173	0.0625	0.09135	0.37981
YML262V	0.85443	0.63291	0.05896	0.18354	0.39873	0.26582	0.29114	0.13291	0.03797	0.32911	0.18354	0.06862	0.22152	0.02532	0.37975	0.1519	0.24684
YOR074C	0.35931	0.38095	0.22078	0.03886	0.25974	0.11688	0.45022	0.02597	0.24675	0.11688	0.48485	0.00433	0.27706	0.15584	0.02165	0.17749	0.07359
YER070V	0.23986	0.14189	0.25338	0.09459	0.39189	0.39189	0.00676	0.12162	0.18554	0.30068	0.30405	0.17568	0.17905	0.08757	0.04054	0.21959	0.06081
YLR103C	0.28571	0.1039	0.16883	0.26623	0.24026	0.24026	0.02597	0.08442	0.08442	0.48052	0.11688	0.16234	0.31169	0.06494	0.06494	0.19481	0.04545
YML312V	0.05714	0.72571	0.27429	0.10286	0.00571	0.41714	0.29143	0.18286	0.13143	0.35429	0.09714	0.17143	0.38857	0.12	0.38857	0.22857	0.18286
YJL074C	0.15094	0.71698	0.28302	0.08019	0.40094	0.08962	0.30189	0.01415	0.21698	0.19811	0.24528	0.00472	0.37736	0.04717	0.08491	0.00943	0.10849
YJL187C	0.11858	0.23715	0.21739	0.05138	0.19763	0.03162	0.01976	0.07905	0.11462	0.3834	0.14229	0.00395	0.28772	0.0807	0.03557	0.05929	0.10849
YBR088C	0.10175	0.72632	0.14035	0.17193	0.34035	0.20702	0.43509	0.21574	0.21574	0.43509	0.23509	0.07368	0.28772	0.0807	0.03557	0.05929	0.10849
YML102V	0.97518	0.68794	0.28369	0.13121	0.28014	0.01773	0.00709	0.03901	0.19504	0.32624	0.15957	0.00709	0.2234	0.04255	0.26241	0.05319	0.07801
YKL133C	0.35079	0.38743	0.26178	0.25654	0.17801	0.27225	0.12042	0.03665	0.07853	0.49738	0.1623	0.02618	0.40314	0.04712	0.03685	0.33508	0.17277
YDL184C	0.0452	0.61582	0.21469	0.20339	0.35593	0.0226	0.41808	0	0.24859	0.28814	0.35028	0.07345	0.45198	0.02825	0.19774	0.0226	0.0226
YGL038C	0.42953	0.48322	0.04698	0.62416	0.28188	0.50336	0.1745	0.00671	0.41611	0.08054	0.20805	0.21477	0.11409	0.16107	0.01342	0.22148	0.08725
YPL057C	0.33516	0.68881	0.06593	0.02198	0.15385	0.43407	0.40659	0.15934	0.51083	0.41758	0.1044	0.0989	0.20879	0.07692	0.32418	0.09341	0.04945
YKL067V	0.40878	0.13559	0.32768	0.14688	0.0804	0.36158	0.23164	0.16949	0.03342	0.26221	0.32905	0.08483	0.00771	0.20308	0.22034	0.0113	0.27684
YER001V	0.41131	0.37275	0.21594	0.27506	0.00514	0.23907	0.04113	0.13882	0.03342	0.26221	0.32905	0.08483	0.00771	0.20308	0.22034	0.0113	0.27684
YPR135V	0.10204	0.70818	0.25	0.31122	0.32143	0.16837	0.17347	0.01531	0.04082	0.4898	0.22859	0.07143	0.36735	0.06122	0.14286	0.01531	0.14796
YOL007C	0.07826	0.90435	0.04348	0.01739	0.53843	0.06522	0.37391	0.12609	0.33043	0.16957	0.3913	0.08896	0.16957	0.28696	0.05652	0.1913	0.08261
YPL266C	0.2069	0.5977	0.16867	0.35832	0.14943	0.16379	0.27586	0.0546	0.12356	0.41092	0.35057	0.13506	0.15517	0.1092	0.14388	0.02011	0.18678
YIL140V	0.14286	0.85714	0.225	0.17143	0.15357	0.23929	0.12143	0.03214	0.02143	0.20714	0.41071	0.14643	0.23214	0.01429	0.06786	0.03214	0.25714
YDR309C	0.44061	0.36398	0.01916	0.10345	0.32587	0.1341	0.01149	0.22605	0.06513	0.69232	0.35632	0.01916	0.36015	0.31801	0.2682	0.23755	0.14176
YMR199V	0.22105	0.77895	0.14737	0.02456	0.1614	0.14386	0.21404	0.2	0.11193	0.50475	0.16842	0.05263	0.24211	0.01754	0.12982	0.13684	0.16491
YGR152C	0.05806	0.69032	0.02581	0.17419	0.14839	0.22581	0.26452	0.03226	0.05806	0.52258	0.07742	0.08387	0.13548	0.10988	0.21935	0.08387	0.34839
YBL035C	0.0852	0.73991	0.0583	0.30942	0.38117	0.10762	0.35426	0.55805	0.6861	0.17937	0.10762	0.01794	0.13004	0.25581	0.18834	0.21525	0.13453
YPR175V	0.08721	1	0.26744	0.04651	0.35465	0.12791	0.16279	0.03488	0.06395	0.31977	0.24419	0.12791	0.30233	0.0407	0.27326	0.24419	0.26488
YER111C	0.36822	0.62791	0.00388	0.32171	0.13953	0.39922	0.01163	0.02713	0.31763	0.31763	0.04284	0.15991	0.21705	0.03101	0.16887	0.07752	0.05039

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